

Strategic planning for sustainable organic hillside agriculture with a farming system and value chain model in Nicoya, Guanacaste

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Summary

The Nicoya Peninsula is part of the Guanacaste province of Costa Rica and is characterized by a tropical climate with a pronounced dry season marked by droughts. On 25 of July 2016, the Association of organic hillside producers *Orgánicos el Cerro Negro* was recognized with the first price in the first Regional Contest on Drought Adaptation Strategies in Guanacaste, organized by CIRAD and Fundación Nicoyagua, HIDROCEC-UNA, CATIE, ASADA de Huacas, MAG-Chorotega, UCR and La Voz de Guanacaste as part of the FuturAgua Project.

Two elements are considered key in the sustainable development of *Orgánicos el Cerro Negro* and of the agricultural value chain for organic products: 1) the innovative water harvesting solutions that the association has developed with the Universidad Nacional (UNA), 2) Organic certification of their production.

In 2012 *Orgánicos el Cerro Negro* started the transition towards a Participatory Guarantee System which was enabled by Costa Rican legislation in 2002. In this system the interaction with end consumers is part of a strategy to build trust, and to create feedback loops in the value chain towards a circular flow of information. This enables better production planning for the producers. Nevertheless, the association supplies a group of clients that they believe is too small, therefore they are looking for ways to increase sales and diversify products and services in order to expand their client base and reduce financial risks.

We present a value chain approach that was applied to describe and quantify the route from producer to consumer for the main organic products. On that base a strategic business plan was developed in a participative process, based on CATIE methodology for the development of strategic planning for rural associations (Gottret 2011) and on modeling farms productive hydro-agro-systems. We show how this strengthens the association by securing the consumer base, and increases its autonomy relative to government and NGO aid. The application of General Algebraic Modeling System software (GAMS Development Corporation 2013) to simulate production on farm level and the use of irrigation systems is used to back discussions to evaluate the profitability of *Orgánicos el Cerro* under various constraints and scenarios. We take into account the short term seasonal variations in climatologic and hydrologic conditions and long term climate prognostics, and a fluctuating, but growing demand for organic products, as well as the effect of organic certification schemes.

The development of a sound model business strategy based on innovative water harvest solutions that enables sustainable production by reducing climate variability – and financial risks can be shared and expanded in the wider Guanacaste region and other draught sensitive regions.

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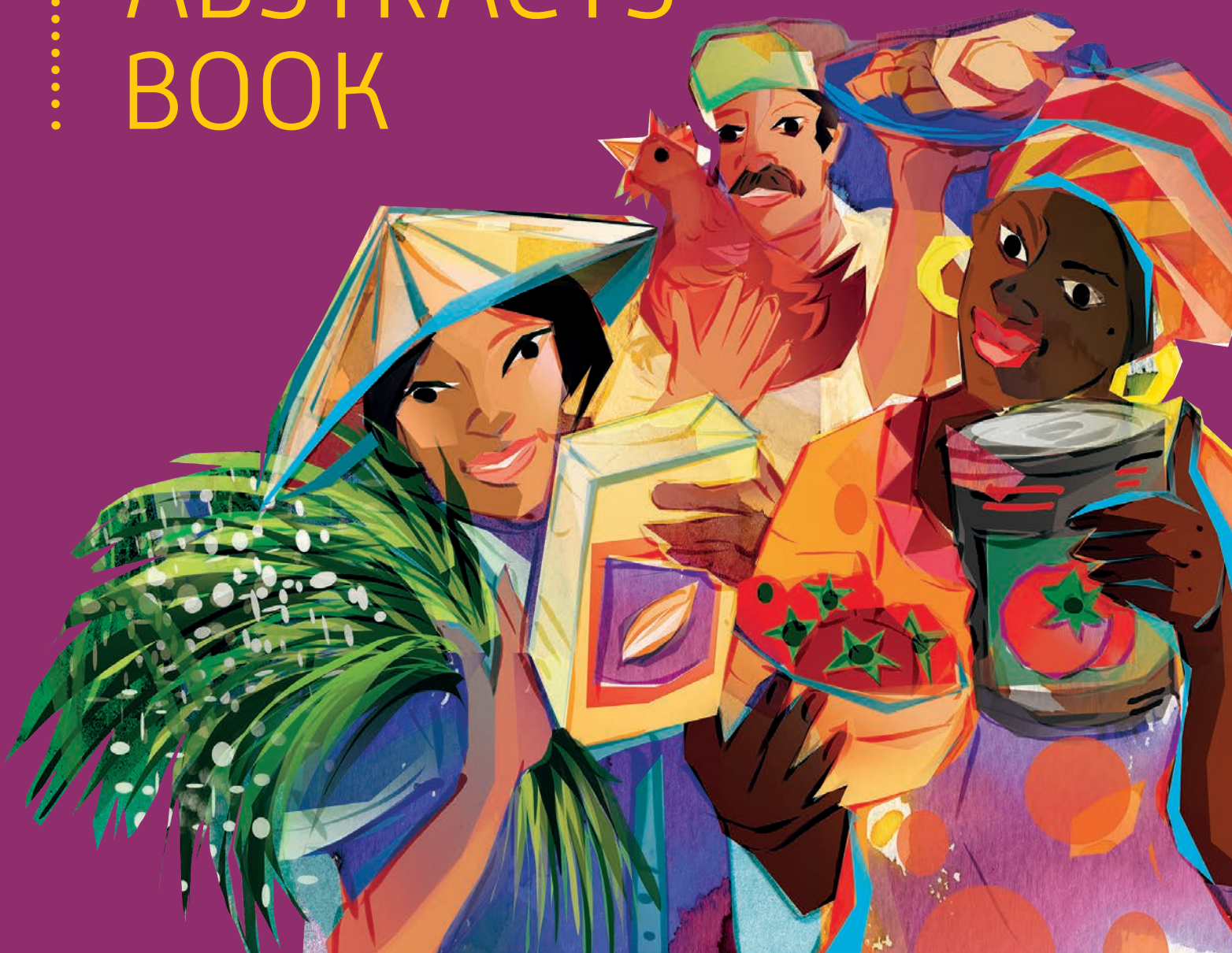
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Agri-Chains & Sustainable Development
> *Linking local and global dynamics*

ABSTRACTS BOOK



WELCOME ADDRESS



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Welcome to AC&SD 2016

On behalf of the Scientific and Organizing Committees, it is a great pleasure to welcome you to the International Conference on Agri-chains and Sustainable Development (AC&SD 2016). This conference aspires to widen the debate about the role of agricultural value chains towards sustainable development. Year 2015 was a critical political and diplomatic milestone: the member states of the United Nations signed a new agenda for development, with the 17 Sustainable Development Goals (SDGs) placing sustainability at the core of international efforts. Development and academic actors are since then exploring new avenues for translating the SDGs into reality and implementing global and local frameworks and partnerships. Our conference aims at joining these efforts, with the consideration that agricultural value chains form spaces where local and global challenges to sustainability connect and within which local and global actors experiment and negotiate innovative solutions.

The scientific committee has assembled a very attractive program for AC&SD 2016 that seeks to cover and confront the diversity of realities behind agri-chains, from localized chains, embedded in specific places, to global value chains. In the parallel sessions, transformations of these agri-chains and their connections to sustainable development will be discussed by speakers from the academia, the civil society, the private sector and decision makers. This multi-stakeholder perspective will also be brought about in the plenary sessions. Here, world renowned keynotes and panelists to three high level round tables will discuss about the role and importance of evaluation, public and private institutions and innovations at different scales for transforming agri-chains towards sustainability transitions.

This edition gathers about 250 participants from 39 countries. AC&SD 2016 owes a lot to the scientific and organizing committees for preparing the program, and particularly to Brigitte Cabantous, Chantal Carrasco and Nathalie Curiallet for all the logistics, as well as to our support team of Alpha Visa that we warmly thank for their help.

We wish us all a fascinating, successful, inspiring and enjoyable AC&SD 2016 and we very much look forward to its result and to the strengthening of both a scientific community and a community of practice to implement the outcome!!

Estelle Biénabe, Patrick Caron and Flavia Fabiano,
Cirad Co-chairs AC&SD 2016

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